

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Krivitski, Nikolai M.

Atty. Docket: 86017.000010

Serial No.: 09/419,849

Examiner: Dickens, C.

Filed: October 19, 1999

Art Unit: 2855

Title: METHOD AND APPARATUS TO MEASURE BLOOD FLOW BY AN
INTRODUCED VOLUME CHANGEAMENDMENT AFTER FINALCommissioner of Patents and Trademarks
Washington, D.C. 20231

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JUL 17 2002

TECHNOLOGY CENTER 2800

Sir:

In response to the Office Action mailed June 17, 2002 please amend the
application referenced above as follows:

On page 16, please replace the paragraph spanning line 13 through page 17, line 4

with:

Figure 8 depicts how this configuration may be implemented in practice, using a single catheter. The catheter 22 of Figure 8 includes the upstream port 51, a downstream port 53 and an intermediate sensor 50. Volume changes can be introduced by first introducing an upstream volume change into the upstream port 51 in the catheter 22, then introducing a downstream volume change into the downstream port 53 of the catheter. For simplicity, the volume change in the upstream port 51 is selected equal to the volume change into the downstream port 53 and $= Q_i$. Flow measurements made during the injection will again be indicated by the suffix i . There are now two different kinds of measurements on the Q_b sensor 50: one where the sensor indicates the downstream flow changes resulting from the first injection ($= Q_{bdi}$) and one where the sensor indicates upstream flow changes resulting from the second injection (Q_{bui}).

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The conservation of mass principle yields the following equations for the two injections:

$$Q_{ui}^* + Q_i = Q_{bdi}^*$$

(Eq. 17a)

$$Q_{bui}^* + Q_i = Q_{di}^*$$

(Eq. 17b)